CLAIMS

1 1. An apparatus comprising:

2 at least one processor;

3 a memory coupled to the at least one processor;

4 a partition manager residing in the memory and executed by the at least one

5 processor;

6 an I/O adapter coupled to the at least one processor;

7 a device driver for the I/O adapter, the device driver including an interface for

8 performing an I/O operation on a first address of a first length by the I/O adapter, the

9 device driver making a call to the partition manager passing the address of the first length

10 to retrieve a corresponding address of a second length; and

11 a memory tag mechanism that creates a memory tag of the first length that

12 corresponds to a second address of the second length, wherein the memory tag comprises

13 an identifier that does not represent physical memory;

14 wherein the partition manager, when the device driver makes the call to the

15 partition manager passing the first address of the first length to retrieve the corresponding

16 address of the second length, detects when the first address is a memory tag, and if so,

17 returns the second address of the second length that corresponds to the memory tag.

1 2. The apparatus of claim 1 wherein the partition manager detects when the first

2 address is a memory tag by determining that the first address is in a predefined range of

3 addresses.

1 3. The apparatus of claim 1 wherein an address of the second length may be used to

2 initiate a redirected direct memory access operation by the memory tag mechanism

3 creating a memory tag of the first length that corresponds to the address of the second

4 length and passing the corresponding memory tag to the device driver.

1 4.   The apparatus of claim 1 wherein the first length is 64 bits and the second length

2 is 32 bits.

1 5. A computer-implemented method for accessing an I/O adapter, the method
2 comprising the steps of:
3   (A) creating a memory tag of a first length that corresponds to a second address of
4 a second length, wherein the memory tag comprises an identifier that does not represent
5 physical memory;
6   (B) passing the memory tag to a device driver for the I/O adapter;
7   (C) the device driver passing the memory tag to a partition manager to determine
8 the second address of the second length that corresponds to the memory tag;
9   (D) the partition manager returning to the device driver the second address of the
10 second length that corresponds to the memory tag; and
11   (E) the device driver accessing the I/O adapter using the second address of the
12 second length that corresponds to the memory tag.

1 6. The method of claim 5 further comprising the step of the I/O adapter performing a
2 direct memory access (DMA) operation at a location specified by the second address.

1 7. The method of claim 6 wherein the DMA operation comprises a redirected DMA
2 operation.

1 8. The method of claim 5 wherein step (D) comprises the step of the partition
2 manager detecting when the first address is a memory tag.

1 9. The method of claim 8 wherein the partition manager in step (D) detects when the
2 first address is a memory tag by determining that the first address is in a predefined range
3 of addresses.

1 10. The method of claim 5 wherein an address of the second length may be used to

2 initiate a redirected direct memory access operation by creating a memory tag of the first

3 length that corresponds to the address of the second length and passing the corresponding

4 memory tag to the device driver.

1 11. The method of claim 5 wherein the first length is 64 bits and the second length is

2 32 bits.

1   12.   A computer readable program product comprising:

2   (A) a memory tag mechanism that creates a memory tag of a first length that

3 corresponds to a second address of a second length, wherein the memory tag comprises

4 an identifier that does not represent physical memory, the memory tag being passed to a

5 device driver for an I/O adapter, the device driver including an interface for performing

6 an I/O operation on a first address of a first length by the I/O adapter, the device driver

7 making a call to a partition manager passing the address of the first length to retrieve a

8 corresponding address of a second length, wherein the partition manager detects when the

9 first address is a memory tag, and if so, returns the second address of the second length

10 that corresponds to the memory tag; and

11   (B) computer readable signal bearing media bearing the memory tag mechanism.

1   13.   The program product of claim 12 wherein the signal bearing media comprises

2 recordable media.

1   14.   The program product of claim 12 wherein the signal bearing media comprises

2 transmission media.

1   15.   The program product of claim 12 wherein the partition manager detects when the

2 first address is a memory tag by determining that the first address is in a predefined range

3 of addresses.

1   16.   The program product of claim 12 wherein an address of the second length may be

2 used to initiate a redirected direct memory access operation by the memory tag

3 mechanism creating a memory tag of the first length that corresponds to the address of the

4 second length and passing the corresponding memory tag to the device driver.

1 17.   The program product of claim 12 wherein the first length is 64 bits and the second
2 length is 32 bits.

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